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ABSTRACT

This study examined the effects of sex, structure, and social interaction on 18 white middle class children, nine boys and nine girls, attending a daycare center. The children were observed over a 6-week period during a 2 1/2-hour free-play time. Results showed that both sexes equally apportion all types of free-play time behavior, show the same amount of make-believe play, and identically utilize a given play area (such as householding or blocks/trucks) for make-believe. Different play areas generated different amounts of make-believe, with the household areas generating the most make-believe. In addition, make-believe in the household area was found to elicit a greater proportion of social interaction than other types of behavior and other play areas. The only sex difference found was that boys engage in more make-believe than girls in nonstructured areas like open floor spaces. It is suggested that these findings seem to disconfirm various modeling hypotheses. Educational implications of the findings are discussed. (MS)

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THE EFFECTS OF SEX, STRUCTURE, AND SOCIAL INTERACTION ON PRESCHOOLERS' MAKE-BELIEVE IN A NATURALISTIC SETTING

by

MARK BRENNER

B.A., Northwestern University, 1973
M.S., Northwestern University, 1974

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THESIS

Submitted in partial fulfillment of the requirements
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INTRODUCTION

During the last half-century, the investigation of play has followed a rather torturous course. The interwar period in America and Europe (1925-1939) signalled a Renaissance in play research. Buhler (1928), Isaacs (1930), Hurlock (1934), Markey (1935), and Valentine (1938) were among the many influential contributors. Even after World War II, for a time, there was some quite significant work done on play--by Piaget (1951), by Erikson (1950), and by Hartley (1952). Then with the Cold War and the race for hegemony, there came the demand for empiricism and utilitarianism. Behaviorism flourished as did the physical and applied sciences, but play research did not. It seemed patently obvious at the time that play could neither put astronauts on the moon nor socialize the young in a predictable way. So, it was not until the middle 1960's that some psychologists again felt encouraged to investigate this elusive phenomenon called play.

One of the many, and perhaps the most striking, paradoxes concerning play that remains unresolved is that now there exists a mountain of research and theory demonstrating the primacy of play for the child's development, yet there has been little institutional recognition of this fact. Sutton-Smith (1966), one of the most prolific investigators of play, alludes to this primacy when he says,

> Play is not solely a cognitive function nor solely conative or affective, but an expressive form <u>sui generis</u> with its own unique purpose on the human

> scene. It is therefore remarkable in cognitive terms for its uniqueness, in affective terms for its personal expression of feeling, and in conative terms for its autonomy.

Now this may be merely suggestive and only metaphor, but the literature is quite explicit on the matter.

The Effects of Play on Child Development

The Role of Play in Social Development

In the realm of social development, Smilansky's work (1968) indicates that "sociodramatic" play (i.e., make-believe with others) allows the child to incorporate facts and investigate and revise his understanding of the subtleties of society's institutional relationships. In her view sociodramatic play is for the child the means to the end of active social participation in the real world (teleological though this view may be).

To Alexander (1967), the children's playgroup is one of the three most universal primary social groups. From various other anthropological points of view, the child through make-believe is seen to be deciphering his culture's system of context-bondedness, i.e., the system of stratification of social contexts and categories (after Bateson, 1956).

The Role of Thematic Play in Emotional Development

In the area of emotional development, support for play's fundamental role comes from many quarters. Specifically,

Piaget in his major work on play (1951) nearly paraphrases Erikson's theory of play (1950) when he says:

> The conflict between obedience and individual liberty is, for example, the affliction of childhood, and in real life the only solutions to this conflict are submission, revolt, or cooperation which involves some measure of compromise. In play, however, the conflicts are transposed in such a way that the ego is revenged, either by suppression of the problem or by giving it an acceptable solution.

It is Erikson's contention, too, that make-believe is the child's most natural auto-therapeutic measure. According to him, playing out a problem helps the child gain a sense of mastery over his inner life and secondarily over his environment. Through make-believe the child can transcend his all too obvious subordinate position and become the controller of events. Strikingly, Garvey (1972), in her wholly unrelated work on the underlying structure of make-believe, suggests, too, that one of the most "intrinsically satisfying" features of socio-dramatic play for the child participant is the element of control.

Still from another point of view, that of Millar (1968), in her exhaustive review of the area, one finds further support for Erikson's notion of play as a reflection of current personal concerns. Millar, from her information-processing viewpoint, proposes that if it is correct to define make-believe as thinking in action with few constraints, then it is "almost a truism" that its content is dictated by whatever is of current interest to the child. Whatever is new, impressive, connected

with something important in the child's life is likely to have some priority of being selected.

Finally, in a longitudinal study by Fineman (1962) on some of the other emotional parameters of play, the mother-child relationship was shown to be of critical importance to the development of "imaginative" play. Children deficient in this skill exhibit greater dependence upon their mothers, less adequate mastery, and greater unwillingness to accept reality than do children proficient in make-believe. Furthermore, the mothers of children deficient in this skill show specific conflicts centered around the expression of their own fantasy life.

Make-believe and Creativity

Some of the attention focused on play has been generated by the apparent interconnection between make-believe and creativity. Gerard (1959), perhaps most provocatively, has suggested the implications of this link: "Imagination not reason creates the novel . . .it is to social inheritance what mutation is to biological inheritance." In fact, Feitelson and Ross (1973) speculate that the personality traits one would expect a child to use in make-believe, such as "innovative creative modality," "intrinsic motivation," "perseverance," "self-confidence," and "active engagement," are exactly the same traits attributed to successful artists and scientists.

Some of the empirical studies (Dansky and Silverman, 1973; Lieberman, 1965) on the relationship between make-believe and

creativity show that make-believe can facilitate certain established elements of creativity, e.g., associative fluency. Moreover, Lieberman's work points to a strong relationship between the quality of playfulness in a child's behavior and various quantifiable elements of divergent thought processes in general--ideational fluency, spontaneous flexibility, and originality.

The Role of Make-believe in Cognitive Development

Piaget's functional analyses of symbolic play (1951) have stressed predominantly this play form's influence on intellectual development. In Piaget's view the child by making believe comes increasingly to differentiate the subjective and objective. Along this same line Vygotsky (1967) asserts that through play thought becomes separated from situational constraints and progresses towards its more abstract forms. In short then symbolic play as seen from this perspective functions like exploratory play, except that symbols rather than objects are manipulated and investigated.

Millar (1968) and Lovinger (1974) maintain that symbolic play helps to organize data into meaningful concepts and facilitates the flexible use of these concepts. Since internal thought is a rather late addition to the child's repertoire of skills, the child "thinks" with his whole body during his early years. Thus, toys and objects of all kinds, plus roles, are used to clarify the child's understandings and his thinking. As an example, Lovinger's study indicates that when children are

enabled to use sociodramatic play their use of language increases. Furthermore, this greater facility with language is harnessed and employed in cognitive tasks that are handled more effectively.

In fact, much work (Smilansky, 1968; Sigel, 1968; Sutton-Smith, 1967; and Lovinger, 1974) suggests that disadvantaged children exhibit deficiencies in their sociodramatic play and at the same time lack the more advanced cognitive abilities cited above. Specifically, these children appear to end up with disjointed pieces of experiential data rather than with generalizations and concepts. This prevents them from molding existing concepts into new ones, from elaborating a theme, and from seeing things from different points of view. The evidence indicates that sociodramatic play aids in the needed integration of experiences.

Symbolic Play and Biology

Taking the long view of the ethologists, one can argue that play, in essence, allows the organism to exercise the voluntary (vis-á-vis involuntary) control systems of its CNS. Voluntary controls involve various forms of competence such as the anticipation of outcomes, the choice of instrumental behaviors, freedom from immediate sensory controls, a capacity to sustain the direction and focus of behavior, sequential organization, and skill in mobilizing internal resources. All of these abilities are integrally involved in play. So, from a

biological or phylogenetic viewpoint, one could regard play as a developer of higher mental processes.

This mass of work points to at least one conclusion beyond the obvious one. That is, it is apparent that play has profound effects on the child's development; however, none of the investigators has ever inferred from this evidence that one would not expect to find sex differences in the production of make-believe. One question, then, that the present study proposes to investigate is: Are there any quantitative differences in the amount of make-believe generated by girls as opposed to boys and, if so, what are some of the qualitative dimensions of this difference?

Contextual Effects on Play

Long-term Developmental Effects

Studies done as early as Gulick's in 1920 document the absence of play among lower SES children in crowded metropolitan areas in the United States. Hetzer's work (1929) in Vienna further supports the importance of adequate space to the development of play.

Other workers (Ammar, 1954; Feitelson, 1954; 1959; Levine and Levine, 1963) have observed play behavior in rural communities in both pre-industrial and industrial societies, finding a scarcity of symbolic play. One can readily infer that time or rather the lack of it is probably the crucial factor in these environments.

Other evidence demonstrates the importance of the availability of materials. The works of Van Alstyne (1932), Buhler (1928), Valentine (1938), and Vygotsky (1967) all point to the necessity of access to play-props for the development of symbolic play. Thus, the "good enough" play environment requires adequate space, time, and materials. The conclusion to be drawn is that more or less adequate environments have differential effects on the development of this skill.

Intra- and Individual Differences in Play Production

As an example of the early work that is revealing in terms of contextual effects, Parten's study [illegible] children shows that these children prefer to play in dyads; are most often found playing in the sandbox, doll-play areas, and with trains/trucks/cars; and are most social when playing house. Thus, one may infer that group size, play area, and play materials have a significant effect on the quantity of play and on the quality of play and its attendant social interaction.

Studies from the last ten or twelve years support these findings and extend them. A more extensive picture has been sketched showing the relationship between various features of the physical environment and the amounts and kinds of social play behavior, choice of companions, aggressive behavior, motor activity, and so forth. For example, Swift (1964) and Hutt and Vaizey (1966) have shown that restriction of play space increases conflicts between children. Hutt and McGrew (1967)

looked at the differential effects of various space partitionings. Gramza (1970) and Smith (1974) looked at the changes in play behavior as a result of changes in the kinds of equipment provided. Gramza's work, especially, illustrates the incredible sensitivity of children to subtle environmental changes.

Smith (1974) found that simply the size of various play apparatuses has differential effects on the quantity and quality of play. Most relevant for the present study is Smith's finding that movable (and I would suggest enclosing) objects such as toy chests and cardboard boxes generate conspicuously high levels of imaginative social play.

Consequently, any study of make-believe should pay close attention to the contextual parameters of the natural setting. Unfortunately, no studies have even begun to identify these parameters in any systematic way. This identification of contextual variables would seem to be particularly important in light of the many intervention and enrichment studies (Marshall and Hahn, 1967; Saltz and Johnson, 1974; Lovinger, 1974; Singer, 1973) that have been carried out. The various techniques used often ignore some of the most fundamental factors operating in a child's natural play setting. As an example, Feitelson and Ross (1973) tutored kindergarteners in make-believe in order to test a modelling hypothesis on symbolic play. The fact that some of their results are equivocal seems attributable to their tutoring procedure. That is, the children were tutored individually and all pre- and posttest measures were taken under

these conditions. This design, then, completely neglects the fact that the natural setting for a normal five-year-old's make-believe play is a social one (see, for example, Piaget, 1952; Smilansky, 1968).

Therefore, both from the viewpoint of intervention and from that of facilitative educational environments, the question of contextual effects on make-believe is a crucial one. This, then, is the second focus of the present study. Specifically, what are some of the critical contextual variables affecting the child's production of make-believe?

Defining play is perhaps the most difficult part of doing play research. Millar reflects this when she says, "Play has long been a linguistic wastepaper basket for behavior which looks voluntary, but seems to have no obvious biological or social function." The present study proposes both a definition and a dichotomization of (child's) play into qualitatively different types--exploratory play and make-believe play.

Workers in the field would generally accept the following criteria of play. Play behavior is neither routine nor self-maintenance behavior. It is not instrumental behavior, nor is it competitive or achievement oriented. It often looks like socially prescribed, institutionalized, or ritual behavior but occurring outside of the context in which the behavior is socially sanctioned and enforced (e.g., playing "house"). It

is not games with rules since these are, developmentally, a later play form. It is behavior that is intrinsically motivated and non-goaled.

In Smith's work on the effects of play apparatus size on play behavior, he dichotomizes play along a sensorimotor dimension, gross motor activity vs. fine manipulative skills. Theory and research from a viewpoint different from Smith's suggests to this investigator that play also can be dichotomized along a cognitive dimension. Piaget describes one mode of play, the activity of which is directed towards a not familiar object or being with the intent of understanding it. This he suggests conspicuously adaptive. There is an obvious effort to investigate, learn, and master. The manifest forms of this play mode can be either a sensorimotor exercise or intellectual experiment. This mode of play can usefully be identified as exploratory play.

Piaget opposes this exploratory mode to what he calls symbolic play. I believe this term "symbolic" is a misnomer, for at other times Piaget argues that both modes in their pre-operational forms are symbolic. The operative differentiating word should be "transformation" which he too uses but never in a generic sense. The symbolic or representational aspect of the exploratory mode aids in effecting a "solution"; whereas the symbolic process involved in make-believe is a transformational one that "expresses the knowing of the child" who uses objects

or gestures in a manner not adapted to their "proper" function but rather assimilated to the child's inner-motivated representational activity. In short, Piaget contends that "(s)ymbolic play is to practice (exploratory) play as representational intelligence is to sensorimotor intelligence."

Piaget's argument is obviously complex and difficult to encapsulate. However, an elegant experiment conducted by Hutt (1966) concisely expresses the same ideas as Piaget does in his vast study on play. Hutt found that when children are placed in a room with a novel object their play behavior is sequentially invariant. First the children explore the object, i.e., their behavior is directional, goaled towards "getting to know the properties of," and determined by the nature of the object. Over a period of time, the object loses its novelty for the children and the initial exploratory play shifts to what Hutt has called "divergent" play. In this mode the children are, in essence, asking, "What can I do with this object?" as opposed to the question which characterizes exploratory play, "What does this object do?" Further, Hutt states that this divergent play (which is plainly make-believe) is characterized by a "transformation of function response."

In short, then, the present study operationalizes exploratory play as that set of activities undertaken for the sake of functional pleasure derived from motor activity or the feeling of competence derived from intellectual mastery (or both). Make-believe is conceptualized as pivoting on a fantasized theme

involving the symbolic transformation of objects, situations, and participants (that is, the taking of roles).

METHOD

Subjects

Subjects were 18 white middle class children (9 boys and 9 girls) from the day-care center at the Children's Research Center (now Institute of Child Behavior and Development) at the University of Illinois, Champaign-Urbana. For the most part, [illegible] dents. The age range was 3 years 2 months to 4 years 10 months, with an average of 3 years 11½ months. The means for the boys and girls were 3 years 11 months and 4 years, respectively.

All children who were expected to be in the classroom on a regular basis during the six weeks of observations were observed except one boy identified as a "problem" child. A second boy's data (the 20th child) was omitted from all analyses because he was absent nearly 50% of the observation days.

Procedure

The children were observed during November and the beginning of December in the morning during their free-play time, 8:30-11:00. During this time, the children were free to occupy themselves as they chose, although there were occasions on which a teacher or practicum student led a science lesson or the like. These adult-led activities were not scored, since they did not constitute free-play.

The observational method used was a combination of a scan technique and a modified focal child technique (Altmann, 1974). The study focuses on "molar" (see Wright, 1967) behaviors as opposed to "molecular" ones. Thus, two trained observers, each watching one-half of the room (the room has a natural divider) from the same observation room, followed their respective focal child for 30 seconds and recorded its behavior in the next 30 seconds. These 30 second intervals were indicated by tape-recorded beeps.

The observers used a score sheet (see Appendix A) on which they recorded (1) the focal child's name, (2) where she/he was, (3) the quality and quantity of her/his social behavior (solitary/parallel/interactive), and (4) the kind of activity in which she/he was involved--thematic play, exploratory play, aggression (non-playful), teacher-initiated student-teacher interaction or student-initiated student-teacher interaction and a characterization of that interaction, non-play peer interaction, and routine behavior (e.g., clean-up, snack-time). For both forms of play (thematic and exploratory), the observers recorded as much germane material as possible, such as roles, theme, verbalizations, objects being manipulated, and so forth. After this minute of observation-recording, the observer would find another focal child in his (the observer's) assigned zone and repeat the procedure. No child in a zone was recorded a second time until all other children in that zone had been recorded once.

Reliability

Inter-observer agreement on the categories of Area, Social Context, and Behavior was from 86% to 92% between two independent judges, the author and the respective undergraduate assistants. The calculations were based on the number of agreements divided by the total number of agreements and disagreements.

RESULTS

Demographics of Free-play Behavior

Various histograms were constructed to present a broad outline of the children's use of their time during the self-directed portion of their day. Essentially, the first two graphs (Figures 1 and 2) underscore the striking similarities between how the boys and girls use their free-play time. Girls appear to spend only a fraction more of their free time playing than the boys. Both sexes are spending fully 75-80% of their time playing. Further, half of that time is spent in exploratory play, and a quarter of it is spent in make-believe play. The "Other" behavioral category refers to all "not-play" activities--non-playful aggression, various types of teacher-student interactions, non-play peer interactions, and routine behaviors--and occupies little of the children's time. When the children are playing, i.e., exploratory + make-believe play, they make-believe 31.5% of the time (boys = 30.9%, girls = 32.3%) and explore the other two-thirds of the time (boys = 69.1%, girls = 67.3%).

Since the day-care center was not a closed system, i.e., the children could go to two other rooms (one den-like, the other a small gym), there was no guarantee of equal observations for the two sexes. However, the total behavioral observations were quite close, girls comprising 52% of the total behavioral units and boys 48%. Figures 3 and 4 directly compare

the boys to the girls, not concealing the absolute frequency differences between the two groups. Once again the distribution of the sexes' activities is quite similar. Moreover, if the mean percentages represented in the graphs are adjusted for the 52-48% discrepancy in total units observed for the sexes, then the sex differences become even slighter for make-believe and exploratory play.

At this point the author should state that in his judgment all percentages of make-believe cited are conservative ones. This opinion is held for two reasons. First, the observers were directed explicitly to be cautious in their scoring of

[illegible] was to guard against "contaminating" the observers' perceptions with the author's obvious interest in make-believe vis-á-vis exploratory play. Secondly, it is empirically challenging to distinguish whether a child's moving a truck around and through some blocks is a manifestation of an exploratory motor activity or an expression of some theme in the child's head. If the child was playing alone and if there were no verbalizations, sound effects, or gestures, then the observers were told to label the activity "exploratory" rather than "thematic."

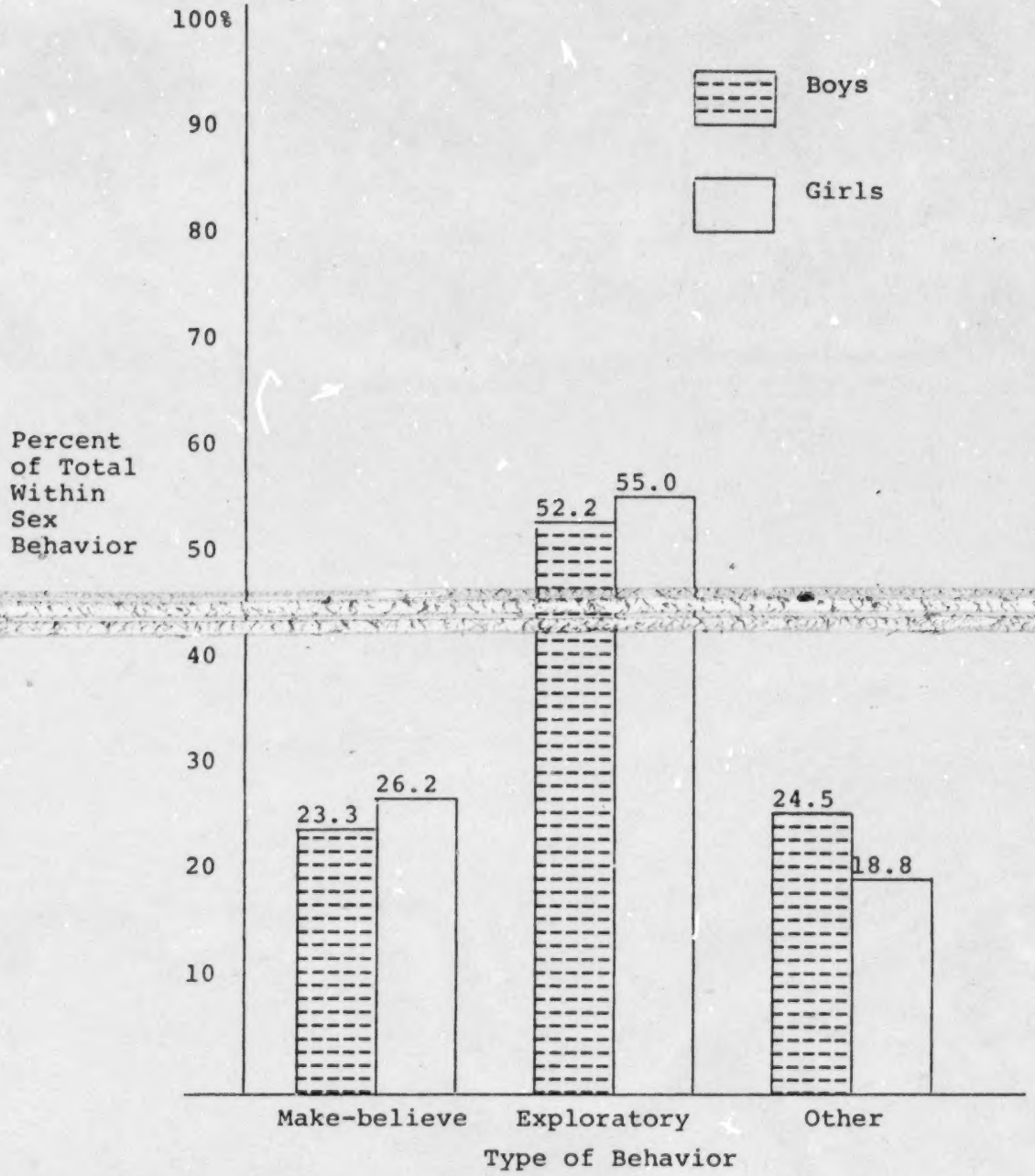

Figure 1. Use of free-time by boys and girls, based on within sex totals.

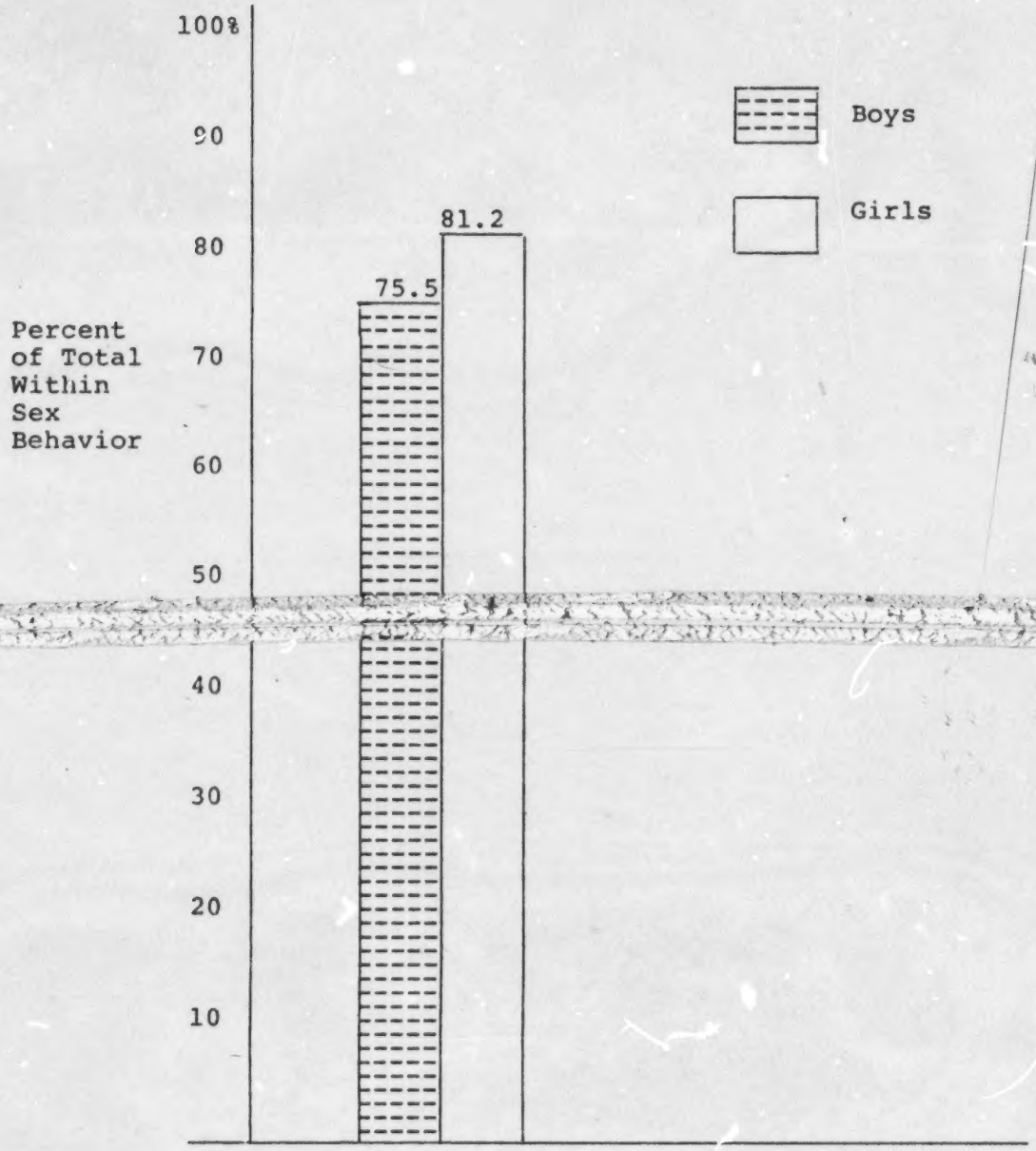

Figure 2. Use of free-time by boys and girls for play.

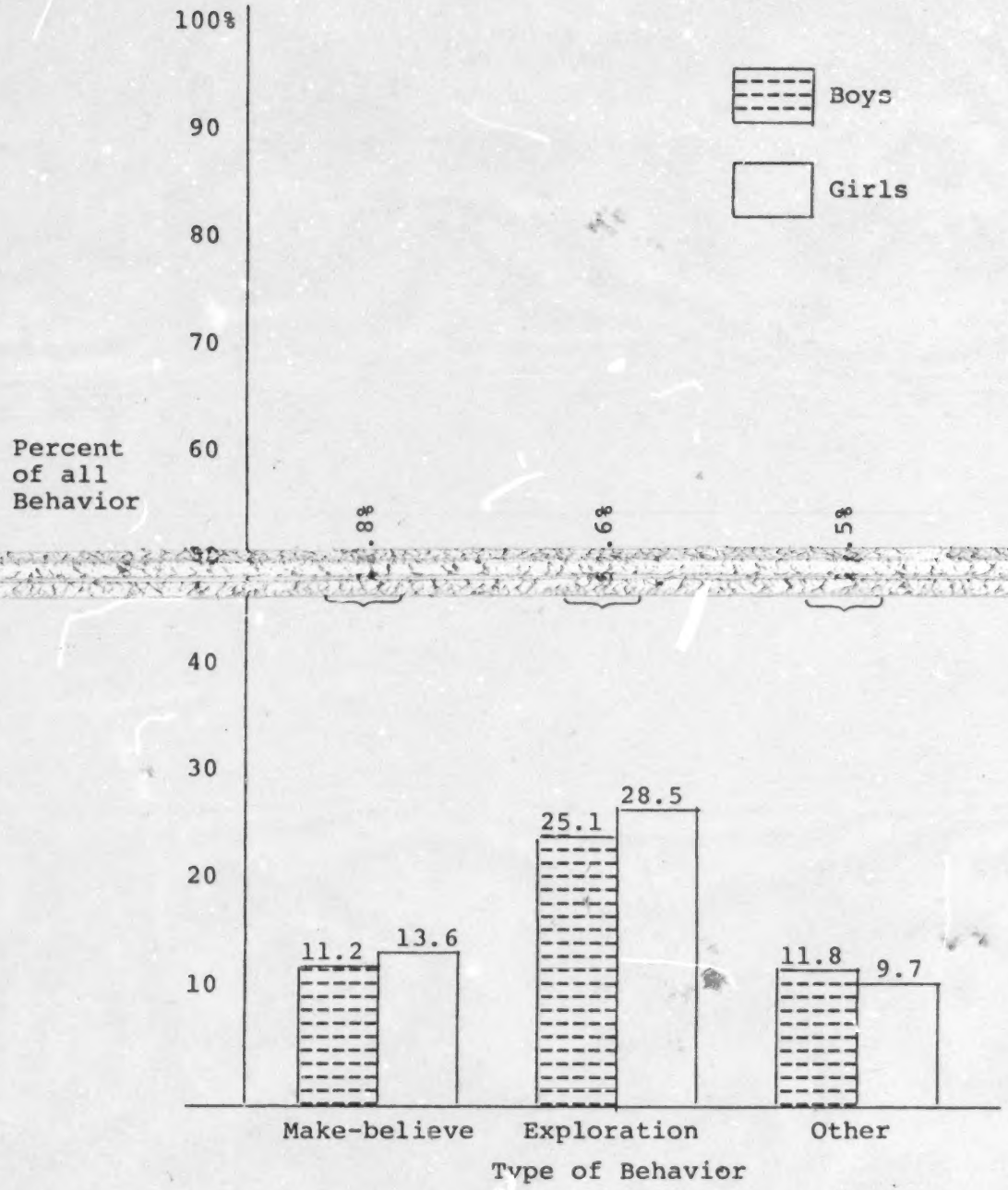

Figure 3. Distribution of behaviors by sex.

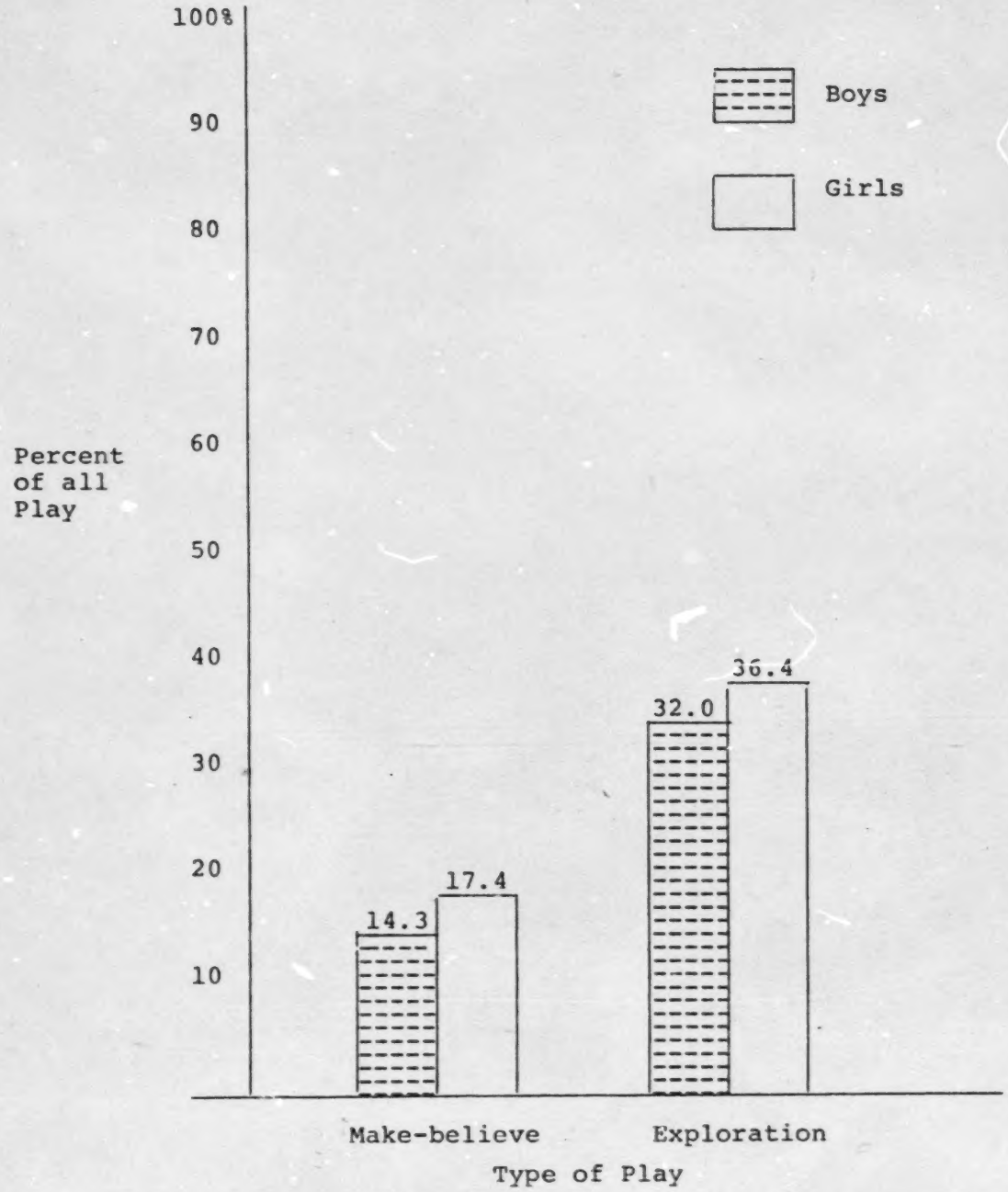

Figure 4. Distribution of type of play by sex.

Critics could marshall the above evidence in arguing against the strong area effects uncovered by the ANOVAs to be cited later in the paper. Specifically, given that the block and truck area and the arts/crafts area by their very nature impose limitations on the observers' ability to identify make-believe, then one could argue that the area effects on make-believe are spurious because make-believe is easiest to identify in the HH area. However, this is doubtful for several reasons. First of all, the area effects were extremely strong, $p < .001$. Secondly, Omark (1972) argues that dyadic drawing of pre-schoolers show a low incidence of thematic content. Finally, the proportion of solitary make-believe scored in the B/T and HH areas (fully one-third of all make-believe was observed in these two areas) is quite high already in the light of the many studies (Smilansky, 1968; Piaget, 1951; Vygotsky, 1967) which show the beginning of the ascendance of social play at this age.

Sex and Contextual Effects on Make-believe

Figure 5 compares the sexes within the various areas solely on a make-believe measure. Since there were possible sex differences between the household means and also between the block and truck means, the Mann-Whitney U test was used to examine these differences. In both cases, the null hypothesis that there is equivalent use of the given area by (or "equal attraction" of these areas for) boys and girls for make-believe was accepted. For the HH area, $z = 1.19$ and was N.S.; for the B/T area, $z = 1.06$ and was N.S.

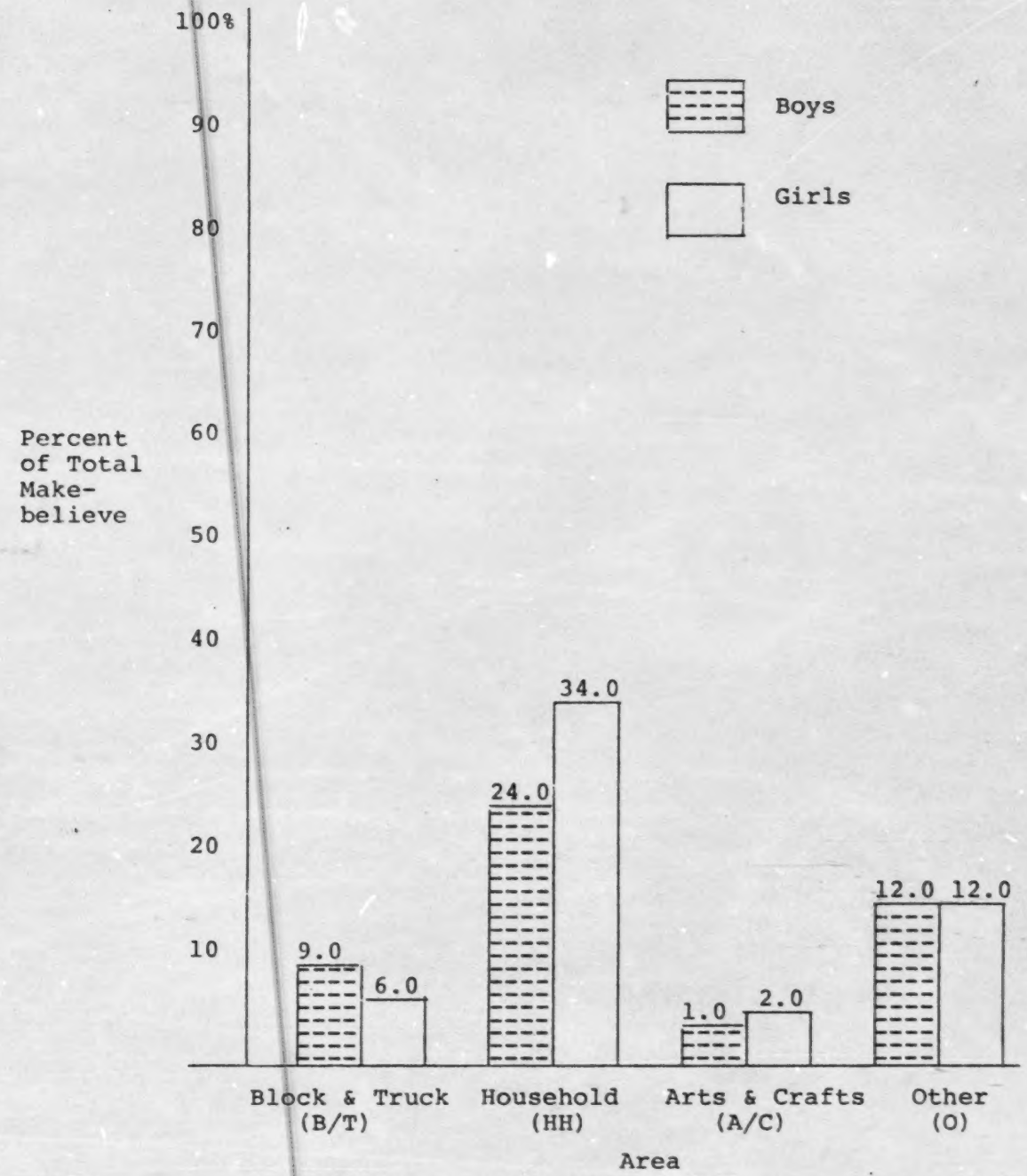

Figure 5. Differences between the sexes in make-believe production by area.

Collapsing the make-believe measures along the area dimension yields a 45.1%-boys to 54.8%-girls differential. This difference, too, was tested with the Mann-Whitney U and found to be non-significant.

Adjusting for the original 52-48% difference in total number of observations of girls vs. boys shrinks the sex differences in the B/T area, produces negligible changes in the HH and A/C percentages, yields a small difference in "Other," and narrows the overall gap between the amount of make-believe produced by the girls and that produced by the boys. Tentatively, then, it could be concluded that there are no differences in the way the sexes use their free-play time, no differences in the frequency of their make-believe, and no differences in their use of a particular play area for make-believe.

Analysis of Variance of Factors Affecting Play

To gain a more powerful insight into these relationships between area, sex, and make-believe, the play data were analyzed by BALANOVA with a split-plot design, A(sex) X B(area) X C(Ss within A). Make-believe was the dependent variable and these scores were expressed as proportions, make-believe ÷ total play, where "play" is the amount of make-believe plus exploration. Since make-believe and exploratory play are related in a binomial fashion, the dependent variable scores were first subjected to an arc-sin transformation. It was these final transformed scores that were analyzed by the BALANOVA program.

Two ANOVAs were computed, each based on differently constructed proportions. In the first analysis, all individual differences in terms of total frequency were factored out by basing the individual's four scores (HH, B/T, A/C, O) on his/her own total number of play units. This equalizes the total number of observations for all children. As a result, this allows one to ask the question, "Given that all 18 Ss were in the main room the same amount of time, are there any significant sex and/or area effects on their play behavior?" Of course, treating the data in this way obscures the fact that in a natural setting such as this multi-roomed day-care center no set of children would be in one of a few rooms for the same amount of time. The observed group of children was no exception.

In the second ANOVA, the frequency differences among the children and between the sexes were included in the analysis by basing each proportion on the total play behavior for all the children combined.[1] This allows one to examine the (natural) differential attraction of various areas/rooms for different children and for the sexes. The question being asked of this data was, "Given that all 18 Ss had complete freedom over their choices of area and room (main room, den, gym), are there any significant sex and/or area effects on their play behavior?"

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[1]The raw data that ANOVA II is based upon is adjusted only for days absent. That is, all Ss' frequencies were standardized and based on a full 11 days present. Also, children not observed in the main room more than two times on a given morning were counted as absent. Absolutely no difference appeared on this latter adjustment between the boys and the girls. Obviously, these adjustments were not necessary in ANOVA I since the use of intra-individual proportions obviates this.

ANOVA I. As predicted there was not a significant main effect of sex on make-believe $F(1,16) = 1.15$, $p > .29$. Also as predicted, a strong environmental effect on the production of make-believe was found, $F(3,48) = 32.08$, $p < .001$. Finally, this first analysis of variance in which the Ss' production of make-believe was compared on a relative basis (i.e., "Assuming all children were in the room an equal amount of time,...") revealed a Sex X Area interaction with borderline significance, $F(3,48) = 2.46$, $p = .074$.

A subsequent examination of the simple effects showed that one of four areas, "Other," had a differential effect on the sexes, $F(1,64) = 5.10$, $p < .05$. A comparison of the means, boys = 5.41 and girls = 3.24, indicates that boys used the least structured area in the classroom (i.e., "Other") for make-believe for a greater proportion of their total play time than did the girls. This led to the conclusion that when boys are playing in the main room they would be found to spend a greater portion of their total play time making-believe in the least structured areas of this room than would the girls. The girls, then, tend to use this unstructured area more for exploratory play.

The test of simple effects also indicates strong effects by Area on girls, $F(3,48) = 54.43$, and for boys, $F(3,48) = 46.84$, both with $p < .001$. This re-emphasizes the fact that different areas have vastly different potential for generating make-believe. The implications of this finding become clearer in ANOVA II.

ANOVA II. In this analysis the data were examined in their purest form in terms of naturalness. Frequency differences among the Ss and between the sexes were left intact. The data were adjusted only for days absent.

Again, no main effect for sex was found. In fact, $F < 1.0$. And, as in ANOVA I, a strong area effect was revealed, $F(1,16) = 25.26$, $p < .001$. However, this second analysis demonstrated no Sex X Area interaction. This result, of course, makes the interpretation of the main effects quite straightforward. In its simplest form, the conclusion could be represented by Figure 6. This graph indicates that, since ANOVA II exhibits no main effect for sex, then one may conclude that when children of either sex had free-play time they would spend their make-believe time among the areas in the fashion depicted in Figure 6.

It is quite striking to find no sex differences in the use of these areas in the main room for make-believe, especially since this data allow for the possibility of a differential attraction by the gym and the small den-like room. However, no such differential appears to exist. Thus, the main room with its specific materials and content areas appears to have an equal attraction for the boys and for the girls. Moreover and more importantly, the four play areas in the main room each have different "make-believe eliciting potentials" which boys and girls both respond to in a very similar manner.

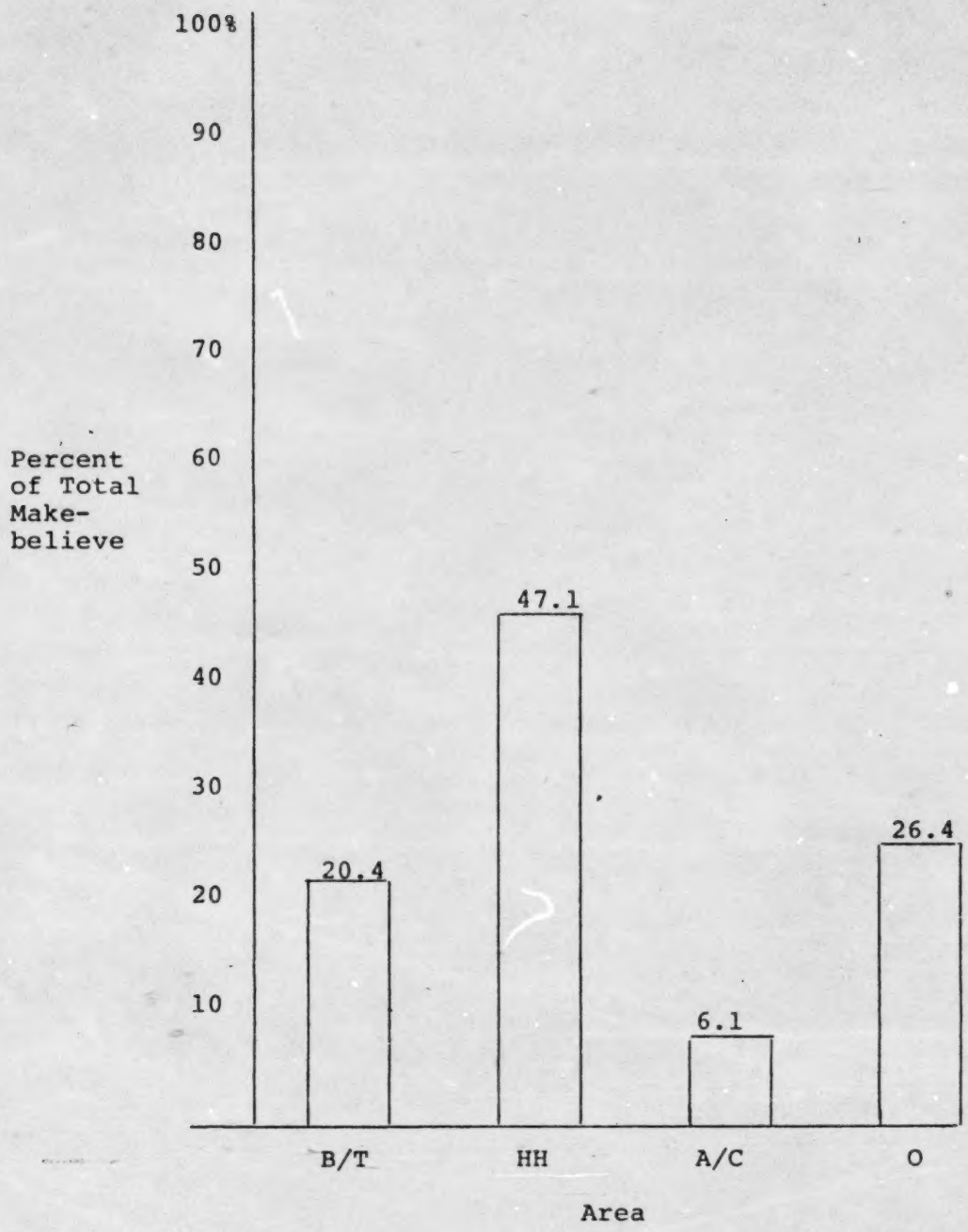

Figure 6. Distribution of children's make-believe without regard to sex. Percentages based on transformed scores.

Scheffe's method was used to test which of these differences between the four Area means were significant:

Table 1

Comparison of Differences among Area Means by Scheffe's Method

Area	$\bar{X}_3$ (A/C)	$\bar{X}_1$ (B/T)	$\bar{X}_4$ (O)	$\bar{X}_2$ (HH)
$\bar{X}_3$ (2.01)	----	4.66	6.64	13.40
$\bar{X}_1$ (6.67)		----	1.98	8.74
$\bar{X}_4$ (8.65)			----	6.76
$\bar{X}_2$ (15.41)				----

It was found that $S = 0.167$ with a $p < .001$, therefore all six pairwise comparisons are highly significant. Consequently, all four areas have significantly different make-believe eliciting potentials. Furthermore, the HH area elicits almost twice as much make-believe as any other area (see Figure 6). This difference is shown to be highly significant and, thus, of great consequence.

Social Factors and Their Effects on Free-time Behavior

One reaction to the above findings might be that the strong main effect for Area exists, at least in part, because of different opportunities for social interaction in the various areas. That is, it could be hypothesized that the significant effect of area reflects not the structural differences of the four play areas but rather varying opportunities for social interaction in them. Consequently, if an analysis of the data showed that, for example, the household area generated or supported proportionally more social behavior overall than the block and truck area, then one might infer that the contextual effects on make-believe, too, were of a social nature rather than of a structural one.

A Wilcoxon matched-pairs signed-ranks test was performed in order to examine this question. All behavior (make-believe + exploratory play + other) in the block and truck and household areas was scored in terms of its solitary or social nature. "Social scores" were given each child in the two areas. This social score was derived by subtracting the number of solitary behavioral events from the social behavioral events. The difference (d) between the scores was calculated as HH minus B/T scores.

The null hypothesis was that the same relative opportunity for social interaction was present in the block and truck area as in the household area. The difference was not statistically

significant ($T = 44$, $p > .05$ for $N = 18$). Thus, the highly significant area effects found in the ANOVA are more likely due to the structural differences between the areas than to any difference of opportunity for social interaction.

Given that there is no difference in the distribution of social behavior that occurs in the B/T and HH areas, the question of a difference in the social nature of just make-believe behavior in these two areas remains. A finding of no difference would suggest that equivalent opportunities for social interaction across all behaviors in both areas transfers in a simple linear fashion to make-believe. One would infer from this that children prefer the same admixture of social: solitary activities regardless of area or type of activity.

In fact, the results of a Wilcoxon test ($T = 18$, $p < .01$ for $N = 17$) force one to reject the above hypothesis. The fact that there is a significant difference in the social nature of make-believe in the two areas but not in overall opportunity for social interaction, suggests that one of the areas elicits proportionally more socio-dramatic play (vis-á-vis solitary make-believe) than the other. An inspection of the means in Table 2 indicates that it is the household area which generates proportionally more social make-believe than the block and truck area. Furthermore, this difference in social interaction between the two areas and between types of behavior implies that the type of behavior engaged in determines to some extent the social configuration in which children will be found.

That is, these children do not prefer the same admixture of social:solitary behavior regardless of area or type of activity. An obvious conclusion to be drawn from this is well illustrated by Table 2. Make-believe, especially in the household area, elicits a greater proportion (and in absolute terms) of social interaction than the other types of behavior and the other area.

Table 2

Means for the Social Nature of Activities, Categorized by Type of Behavior and Area

Make-believe				Exploratory/Other			
B/T		HH		B/T		HH	
Solitary	Social	Solitary	Social	Solitary	Social	Solitary	Social
12	25	42	104	45	40	68	37

DISCUSSION

The Implications of the Findings on Sex Effects

The startling similarities found between the sexes are certainly among the more interesting results of this naturalistic study of free-play time behavior in preschoolers. Not only do both sexes equally apportion all their types of free-play time behavior and show the same amount of make-believe overall, but they are found to identically utilize a given area for make-believe. This means, for example, that boys use the household area for make-believe as much as girls do and that girls use the block and truck area for make-believe as much as boys do.

Implications for a General Theory of Play

The findings reflect back on the body of theory and research upon which the initial prediction was based. It was asserted that, if in fact make-believe is a primary behavior modality in child development, one should expect to find sexual symmetry in the production of this play form. The confirmation of the assertion adds credibility to the body of work which argues for the primacy of make-believe. A finding of sex equivalence along any dimension is such a rarity these days that its occurrence is sobering and should, at least initially, be attributed some consequence.

Lack of Support for a Modelling Theory

The stability of the data in terms of its sex similarities would seem to disconfirm various modelling hypotheses posited, most notably, by Smilansky (1968) and Feitelson and Ross (1973). Smilansky's findings have been refuted convincingly elsewhere (Eifermann, 1971). Feitelson and Ross' contention that modelling is a necessary condition for the appearance of make-believe in all children is questionable, too. It is difficult to reconcile striking parallels between the sexes for play behaviors with a modelling hypothesis. How can this theoretical perspective meaningfully accommodate the fact that boys use the household area for thematic play as much as girls do? Furthermore, the logic of the study is faulty. They compare four groups 'low' in make-believe: (1) directly tutored in make-believe, (2) tutored in music, (3) left alone with toys, and (4) control. They contend that a finding merely of significant improvement in make-believe for the former group and of none for the latter three groups is compelling evidence upon which to conclude "that modelling is an essential prerequisite for the acquisition of the mode of behavior usually called symbolic or thematic play." The reasoning is feeble.

Educational Implications

Results showing no sexual differences in the use of play areas and the obvious predominance of the household area in the elicitation of make-believe have important educational

implications. One might predict that, given contemporary sexual politics, a 'progressive' pre-school teacher might choose to de-emphasize the use of a block and truck area, and, perhaps, even completely dismantle a household area. One inference to be made from this study on play is that dismantling the household area might have a catastrophic effect on the production of make-believe. In fact, an informal look at the just beginning second phase of this ongoing study on play indicates that at least one group of 'progressive' pre-school teachers was inclined to disassemble the area and that such a disassemblement markedly reduced the frequency of make-believe. Given the importance of make-believe in all realms of child development, such a strategy hardly seems prudent.

Upon closer examination, though, the above thoughts and observations really beg the question. One must ask whether the make-believe generated by the household area serves to reify rigid and constraining, sex-stereotyped behaviors. The other possibility is that the reification is only a secondary outcome, at best, of some broader and more important social development.

Stone (1965) has suggested that drama, of which make-believe is a unique suborder, is fundamental for the child's development of a conception of self as an individual different from but related to other individuals. To establish his/her own separate identify, the child must literally get outside of himself and apprehend that self from other perspectives, many of which depend

upon counter-identities, for example, man-woman, parent-child, teacher-student, for their establishment and maintenance. Make-believe provides a prime vehicle for the achievement of these perspectives.

Consequently, by taking the role of the contrastive other, the child gains a reflected view of himself as different from but related to that other; he decenters, as it were. Stone is suggesting, then, that the child ultimately and optimally resolves his own identity through the use of a multitude of triangulations: one of the vertices is the child's of-the-moment self, the second vertex is the contrastive other, and the third is very much directed and finally positioned by the first two. Hypothetically, the third vertex contributes to a newly differentiated and equilibrated self.

Drawing on Bateson's work (1956), it could be summarized that the fundamental issue here is not that the child learns how to be the archetypal male or female while playing such roles in the household area, but that she/he learns that there is such a thing as a role. She/he is not learning a particular style but is learning stylistic flexibility (via the triangulations) and the fact that the choice of style is related to the frame and context of behavior. The child is gradually deciphering her/his culture's system of context-boundedness which Bateson (and more recently, Goffman, 1974) believe is the fundamental system in any society--the system of stratification of contexts and categories. Paradoxically, this theory would

predict that the degree of an individual's sex-role fixity is inversely related to that individual's use of make-believe.

In conclusion, a strong argument can be made, based upon the above view and those presented in the paper's introduction, for counseling teachers and parents not to discourage or prohibit the use of these seemingly sex-typed materials, roles, or themes in their children's make-believe. For discouraging such use may, in effect, greatly reduce the child's use of make-believe overall and yield effects exactly the opposite of those desired. Let it be made explicit, though, that the whole question of the relationship between make-believe and the reification of sex roles and role flexibility is in need of investigation.

The One Difference Between the Sexes

Some consideration should be given to the one difference found between the sexes.[1] ANOVA I indicates that when the children's play behavior is compared on a relative basis, the Other area elicits proportionally more make-believe from boys than from girls. Given that this area is for the most part a collection of non-areas, for example, counter tops, materials

[1]Because the level of significance ($p < .05$) of the simple effect described is much less significant than that seen for the overall area main effect ($p < .001$), the finding might be discounted altogether. This view is supported, to some extent, by the lack of a significant interaction in ANOVA II. Hopefully, the heuristic value of the finding is enough to justify the discussion.

shelves, etc., but predominantly open floor space, then two possible explanations for the sex differences suggest themselves.

One possibility is that the Other area supports and generates more gross motor kinds of activities. Although it was not tested, boys' make-believe seems to involve more gross motor activity than girls', such as cops and robbers, cowboys and Indians, monsters, super-man, fireman, and the like. Girls, when they did use the area, would often place two chairs in some open space and pretend something like "taking-a-trip-to-Chicago." This is a sedentary use of the area. When the girls were motorically active in the area it would involve, for example, being animals (bunnies hopping) or a walking trip to the store.

The other possibility is that there is something about the lack of structure in the area which in and of itself affects the sexes differently. That is, either a lack of structure attracts the boys' fantasies more than the girls' or it has some adverse effect on the girls that it does not have on the boys; for instance, a lack of structure could be more threatening to girls than it is to boys. Whatever the reasons for the difference, an important research question is suggested by these speculations. The question could be placed usefully within the context of the open vs. traditional classroom controversy. Specifically, since one significant dimension along which these

two types of classrooms can be differentiated is 'structure' in terms of both space and time, then a matter of considerable importance is the way in which children are differentially affected by varying degrees of temporo-spatial structure.

The Implications of the Findings on Area Effects for Education, Intervention, and Experimentation

One valuable approach to the data is to ask, "What do these findings suggest about the possible parameters of the 'optimal make-believe environment?'" The results are most explicit for the block and truck area and the household area.[1]

Of importance to educators is the household area's influence on make-believe. Fifty percent of all make-believe generated occurs in that area. Moreover, much of the fantasy acted out in the block and truck area and the arts and crafts area is thematically similar to that of the HH area. Many house and family themes arise in the B/T area, and such activities as making and baking appetizers (clay) appear in the A/C area. Furthermore, the HH area supports, proportionally, two times as much sociodramatic play (i.e., social make-believe) as the B/T area and four times as much in absolute terms (see Table 2).

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[1]The B/T and HH areas were focused on because (1) of their supposed sexually stereotyped characteristics, (2) they are the best defined areas in the room in terms of structure and materials, and (3) two-thirds of all make-believe occurred in the two areas.

However, what the quality of these social interactions might be (i.e., cooperative vs. antagonistic) is unanswerable with the data presented. In the author's opinion, it appears that very little aggressive behavior occurred between the players within an established, ongoing pretend sequence. Rather, antagonistic behaviors were sometimes exhibited when (1) an unwanted "intruder" attempted to gain entry to an on-going sequence, and this would trigger a territorial reaction on the part of the players, or when (2) children would first come together and begin to assign roles and activities to one another, and this would sometimes produce disagreements and refractory behavior. Consequently, in future research it might be valuable to evaluate make-believe in terms of a social measure and in terms of the overall 'success' or 'failure' of the initiation process.

Another characteristic of make-believe as it occurs in a naturalistic setting would be relevant for the planning of intervention techniques and for experimental or quasi-experimental designs. Make-believe, during the pre-school years, becomes predominantly a social affair. The mean size of a make-believe play group in the HH and B/T areas was 2.14 for boys and 1.93 for girls. This is an important consideration for those psychologists trying to create as natural and as optimal an environment for make-believe as possible, whether it be for the purpose of intervention or for that of experimentation. As the discussion about competence vs. performance has illustrated

in recent years, situational variables can often be the key to tapping the individual's true potential on whatever task or measure.

The present study measures only performance and cannot establish much about individual differences for make-believe in terms of high and low levels of competence. To be able to identify the children that are truly low on make-believe skills and those truly high would be of great interest. Then one would be able to explore the reasons for one child's competence and another's deficiencies. An example of the complexities involved in the performance-competence problem is illustrated by one of the author's observations: P was observed during the author's very first morning at the day-care center. The girl was playing in the B/T area with two boys and being frustrated by them. They were excluding her, destroying her constructions, and being verbally aggressive. After each rebuff, she would implement an effective and adaptive response (compromises, functionally), for example, by including the negative stimulus in a positive way in her building and general theme.

When the six weeks of observations had ended, it had become apparent that neither her flexibility and sophisticated compromises nor her rich fantasy productions had ever appeared again. She did not rate as a high performer in the final analysis, even though the behaviors she displayed on the first day of observation were structurally and functionally equivalent to those used by most of the children ranked highest on performance. In addition, this child, who at first glance appeared

strikingly mature for her age, was perceived by her teachers as refractory and mischievious.

One fundamental problem in need of resolution, then, is how to determine which children are low performers and why. The example above suggests that the answer will not always be one of lack of competence. This child clearly was competent. Another child, the lowest performer of the 18 Ss, exhibited a fertile imagination in other settings. Was he not developmentally ready to participate in social make-believe? He tried time and again, although unsuccessfully, to initiate such interaction. He also had a large vocabulary and seemed cognitively precocious, so a cognitive deficit hypothesis[1] seems implausible. Based on the author's observations, a more likely explanation appears to be that the child was perceived as strange by his peers.

Another child was rated quite low on performance, but when he was observed in a quasi-experimental setting, it was obvious that the boy was extremely competent in make-believe skills. Interviews with his teachers confirmed this observation and served to explain the ostensible contradiction: he preferred the gym for his make-believe.

In short, some of the broad outlines of what constitutes the natural and optimal environment for make-believe have been

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[1]Others have argued this convincingly in the case of lower class black children (Sigel, 1970) and in that of certain immigrant populations in Israel (Eifermann, 1971).

sketched in terms of certain sexual, structural, and social parameters. Within this context, other issues have been raised. (1) Differences between competence and performance need to be identified in the children's make-believe. (2) Assuming this can be done, a search should be conducted for the explanations of low competence and/or performance. That is, what are the facilitative strategies and behaviors used by the successful make-believer, and why do some children show deficits? (3) Finally, implicit in the entire discussion is the question, "How does the educator or interventionist or experimenter construct an environment that is even more facilitative and even more 'optimal?'" These problems are all being pursued in the ongoing study of make-believe play.

APPENDIX A

OBSERVATION SHEET

Time	Child	Area	Social Context	Behavior
0 - .5	P	B/T	I (x2), i.e., playing with two others	TA_s: she sought the teacher's attention by climbing on her lap.
1 - 1.5	BI	HH	S	Th: puts on a policeman's hat and directs traffic.
2 - 2.5	AM	Z (zone)	I (x1)	Th: she & A are in a "car" going to the drive-in.
3 - 3.5	E	A/C	S	Expl.: making various shapes with the playdoh.
4 - 4.5	S	B/T	P	R (routine): putting blocks away with RK.
5 - 5.5				

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